

a first Papss2 polypeptide segment comprising an amino acid sequence of (SEQ. ID. NO.:8) or a gene-specific antibody binding fragment thereof at least 6 amino acids long; and a second predetermined polypeptide segment.

113. (New) The fusion protein of Claim 112, wherein the Papss2 polypeptide segment is encoded by a nucleic acid segment having a nucleotide sequence of (SEQ. ID. NO.:10), or a gene-specific fragment thereof.

114. (New) The PAPSS2 fusion protein of Claim 110, wherein the second polypeptide segment is an human immunodeficiency virus TAT protein.

115. (New) The PAPSS2 fusion protein of Claim 111, wherein the second polypeptide segment is an human immunodeficiency virus TAT protein.

116. (New) A protein therapy method for treating a human subject having an osteoarthritic disorder, comprising:

exposing a cell of a tissue of a human subject having an osteoarthritic disorder that is caused or aggravated by deficient enzymatic sulfation activity to a fusion protein comprising a first PAPSS2 polypeptide segment that comprises an amino acid sequence of (SEQ. ID. NO.:7), or an enzymatically active fragment thereof, and a second polypeptide segment capable of infiltrating the cell, whereby the fusion protein is taken up by the cell and the PAPSS2 polypeptide segment is enzymatically active therein.

117. (New) The protein therapy method of Claim 116, wherein the second polypeptide segment is an human immunodeficiency virus TAT protein.

118. (New) The protein therapy method of Claim 116, wherein the osteoarthritic disorder is spondyloepimetaphyseal dysplasia, Stickler syndrome, spondyloepiphyseal dysplasia, achondrogenesis, achondroplasia, chondrodysplasia, diastrophic dysplasia, pseudoachondroplasia, or multiple epiphyseal dysplasia.

119. (New) A kit for the treatment of osteoarthritic disorders caused or aggravated by deficient enzymatic sulfation activity, comprising:

a fusion protein comprising a first PAPSS2 polypeptide segment that comprises an amino acid sequence of (SEQ. ID. NO.:7), or an enzymatically active fragment thereof, and a second polypeptide segment capable of infiltrating the cell; and

instructions for using the fusion protein for treating osteoarthritic disorder(s) caused or aggravated by deficient enzymatic sulfation activity.